JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION
FOR THE SEPARATION SYSTEM
TO SUPPORT THE MAGNETOSPHERIC MULTISCALE (MMS) PROJECT

1. **This document is a justification for other than full and open competition prepared by NASA's Goddard Space Flight Center (NASA's GSFC):** The procuring Agency is NASA, and the contracting activity is NASA's GSFC. This document justifies the determination for using other than full and open competition.

2. **The nature and/or description of the action being approved:** NASA's GSFC proposes to enter into a sole-source contract with RUAG Aerospace Sweden AB for four flight separation systems for the Magnetospheric Multiscale (MMS) project. RUAG Aerospace shall deliver three flight unit separation systems and one flight unit passive half of a launch vehicle separation system in support of the mechanical subsystems of the MMS project.

3. **Description of the supplies or services required, including an estimated value:** The proposed acquisition is for four 1666 mm flight separation system units. RUAG Aerospace will provide the materials and labor to deliver the four flight separation system units to be used to secure the four MMS observatories to each other and the bottom MMS observatory to the active half of the launch vehicle separation system. These units will be incorporated into the mechanical subsystem of the MMS mission. The estimated value of the procurement for the separation system is approximately $***** million. The period of performance is approximately 21 months for delivery, with award expected in June/July 2009.

4. **Statutory authority permitting other than full and open competition:** The statutory authority permitting other than full and open competition is 10 U.S.C. 2304 (c) (1), Only One Responsible Source.

5. **A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited:** The MMS mission is the fourth mission of the Solar Terrestrial Probe program of NASA. The MMS mission will use four identically instrumented observatories to perform the first definitive study of magnetic reconnection in space and will test critical hypotheses about reconnection. Magnetic reconnection is the primary process by which energy is transferred from the solar wind to the Earth's magnetosphere and is also fundamental to the explosive release of energy during substorms and solar flares. The MMS mission will study magnetic reconnection in the Earth's magnetosphere. The four MMS observatories will be required to fly in a tetrahedral formation in order to unambiguously determine the orientation of the magnetic reconnection layer. RUAG Aerospace is uniquely qualified for this contract because of their extensive experience and expertise. Further, they are the only organization currently qualified to perform the subject requirement for the following reasons:

   (1) Science requirements dictate identical observatory shapes, which would also require identical separation systems between stacked MMS observatories and the separation system used by the launch vehicle. MMS science requirements necessitate identical observatory

designs in order to produce identical observatory electrostatic signatures. Identical electrostatic signatures require identical observatory shapes because both the distribution of electrostatic charge on observatory surfaces and the photo-emissive cloud that surrounds the observatory onorbit are driven by shape and surface materials. If the signatures of the observatories are not identical, then electric field measurements between observatories cannot be compared without unacceptable errors that would lead to a violation of mission science requirements. Since the bottom observatory in the stack will mate to the Atlas V upper stage, all separation systems between the observatories must be the same design as that used by the Atlas V, which exclusively uses RUAG units.

(2) There would be significant costs in redesigning and revalidating the launch vehicle separation system and modifying the launch vehicle for a new design. A change in the separation system that the launch vehicle utilizes could support the science driven requirements, but this would necessitate a major design change on the part of the launch vehicle, which was just recently awarded in March 2009. The costs to re-design a new separation system, change the launch vehicle, and requalification are expected to cost several times more than the value of the separation system contract with RUAG Aerospace.

(3) RUAG Aerospace is the only known provider of the 1666 mm separation system units needed for the MMS mission. Based on responses to a Request for Information (RFI) dated December 3, 2007, and an informal market survey, other viable vendors do not exist to provide a practical option. The MMS project's market survey indicates that RUAG Aerospace provides most of the separation systems for western payloads and provides all separation systems in the size and payload mass range that the MMS project requires (approximately 1666 mm and 5100 kg).

6. **Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable, including whether a notice was or will be publicized as required by Federal Acquisition Regulation (FAR) 5.202:** This procurement was synopsized and posted on NASA's Acquisition Internet Service in accordance with the FAR Subpart 5.2. (See item 10 for results.)

7. **A determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable:** We will perform a comprehensive evaluation of the contractor's proposal to ensure that the negotiated cost is fair and reasonable. This evaluation will be based on inputs from a technical evaluation to be performed by the Technical Officer and from verification of direct and indirect costs.

8. **Description of the market research conducted, and the results, or a statement of the reasons market research was not conducted:** A RFI was released on December 3, 2007, with responses due on January 30, 2008. The findings of that RFI process were that RUAG Aerospace was the only vendor that could provide a separation system meeting MMS requirements. Three vendors responded. RUAG Aerospace demonstrated that it could meet all MMS requirements. ATK demonstrated that it had developed a separation system for a

small payload, but it could not meet MMS requirements. Boeing provided an offer of engineering analysis services, but not a design concept.

A separate formal market survey has not been conducted since the results from January 2008; however, an informal market survey was performed within the last 6 months. The results were that RUAG Aerospace was found to provide almost all separation systems to western payloads and all in the payload mass class of MMS.

Based upon our current knowledge and experience of the Contracting Officer's Technical Representative (COTR) and MMS project, no other entities currently exist that can perform the technical requirements of this procurement due to the reasons cited in Paragraph 5 above.

9. **Other facts supporting the use of other than full and open competition:** Any delays resulting in delivery of the separation system for integration and test will directly impact the MMS mission launch schedule. Launch delays would result in significant increases in cost to the MMS program.

10. **Sources, if any, that expressed an interest, in writing, in the acquisition:** This requirement was publicized through the presolicitation synopsis posted on April 3, 2009, with a response date of April 20, 2009. On April 15, 2009, Sierra Nevada called regarding the synopsis expressing an interest in this procurement. Kevin Hughes, COTR, discussed our requirements with them since the exact size of our separation system wasn't clearly identified in the synopsis. Sierra Nevada stated that they did not make a 1666 mm separation system to meet our requirements. No other sources responded to the synopsis expressing an interest in this procurement.

11. **The actions the Agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:** RUAG Aerospace is the only known source with the unique knowledge and the necessary expertise and capability that meets the Government's requirement for the separation system for the MMS project. This contract is intended to satisfy the MMS mission requirements; no follow-on contract is expected. It is not anticipated that competition for this particular effort will be available in the near future.

Signature Page Of JOFOC for the
Separation System to Support the Magnetospheric Multiscale (MMS) Project

TECHNICAL DIRECTORATE: I certify that the facts presented in this Justification are accurate and complete.

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Signature Date

CONTRACTING OFFICER: I certify that the justification is accurate and complete to the best of my knowledge and belief.

_____
Signature Date

PROCUREMENT OFFICER: (CONCURRENCE)
_____
Signature Date

GSFC COMPETITION ADVOCATE: (APPROVAL)
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Signature Date